LETTER

Reply to Chesson *et al.*: Carbon stable isotopes in beef differ distinctly between corporations

In reply to the letter from Chesson *et al.* (1), the fact that we did not separate muscle from lipid in the meat servings that we analyzed is important (2). Here we present an improved calculation based on U.S. Department of Agriculture reports that a dehydrated beef patty from McDonald's, Wendy's, or Burger King ranges in content from 43% to 46% lipid and 54% to 57% protein (3). Using the correct values for muscle and lipid published in Bahar *et al.* (4), we estimated that beef with $\delta^{13}C$ above $-19.5‰$ implied a "final diet of corn silage" (4). This result agrees with the claim of Chesson *et al.* (1): 71% of the burgers we sampled met this particular criterion. However, strong differences between the fast food chains were behind this trend (Fig. 1). More than 80% of McDonald's beef and 98% of the Wendy's beef fit this criterion. Of the beef that did not, a clear majority (74%) came from Burger King. Above the threshold that Chesson *et al.* (1) claim represents >85% corn, 80% of these beef patties came from Wendy's restaurants. This information appeared in table 2 in ref. 2, but we reiterate that Wendy's food items (including fries) reflect conspicuously high corn contribution, even when compared with other fast food restaurants. Our results revealed the previously scientifically undocumented importance of corn in fast food production (including beef, chicken, and fries) on a national level.

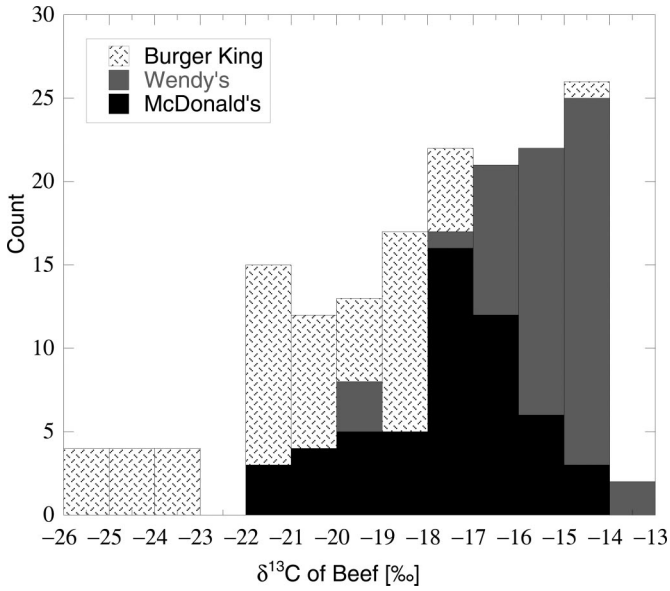

Fig. 1. Distribution of carbon isotopes in beef according to corporation.

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2. Jahren AH, Kraft RA (2008) Carbon and nitrogen stable isotopes in fast food: Signatures of corn and confinement. *Proc Natl Acad Sci USA* 105:17855–17860.
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4. Bahar B, *et al,* (2005) Alteration of the carbon and nitrogen stable isotope composition of beef by substitution of grass silage with maize silage. *Rapid Commun Mass Spectrom* 19:1937–1942.

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The authors declare no conflict of interest.

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